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Intellectual Property Administration
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Fort Collins, CO 80527-2400

EXAMINER

DAVIS, ZACHARY A

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2137

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/918,062	Applicant(s) HARRISON ET AL.	
	Examiner Zachary A. Davis	Art Unit 2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2137

DETAILED ACTION

1. A response was received on 08 March 2007. By this response, Claim 1 has been amended. No claims have been added or canceled. Claims 1-19 are currently pending in the present application.

Response to Arguments

2. Applicant's arguments filed 08 March 2007 have been fully considered but they are not persuasive.

Claims 1-12 and 14-19 were rejected under 35 U.S.C. 103(a) as unpatentable over Linsker et al, US Patent 5598473, in view of Mazzagatte et al, US Patent 6862583; Davis et al, US Patent 5633932; and Menezes et al, *Handbook of Applied Cryptography*. Claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Linsker in view of Mazzagatte, Davis, and Menezes, and further in view of Clark, US Patent 5448045.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Specifically, in reference to each of independent Claims 1, 9, 18, and 19, Applicant argues that Mazzagatte and Linsker do not teach or suggest information being encrypted using a token (i.e. public key) of an intended recipient and then transmitted (see pages 11, 13-14, 16-17, and 19-20 of the present response). The Examiner notes that Mazzagatte and Linsker were not explicitly relied upon for teaching this feature.

Applicant further argues that Menezes does not teach or suggest using a token of an intended recipient to encrypt information transmitted by a sender to the recipient (pages 12, 14, 17, and 20 of the present response). Applicant additionally argues that although Davis discloses encrypting identifying information using a public key of a printing node, Davis does not disclose encrypting the information using the public key of an intended recipient (pages 12, 14-15, 17-18, and 20 of the present response). However, the Examiner respectfully disagrees and believes that, at least in combination, Menezes and Davis at the very least suggest encrypting identifying information with the public key of the intended recipient and transmitting that information from the sender. Specifically, in view of Davis' teaching that at least the public key of the intended recipient, to be used for authentication of the intended recipient, is transmitted from the sender to the receiver (column 4, line 62-column 5, line 1) and that a challenge response protocol can be used for that authentication using the public key of the intended recipient (column 5, lines 52-65) and further in view of Menezes' disclosure of encrypting identification information using the public key of the intended recipient (page 404, "(i) Challenge-response based on public-key decryption", where P_A denotes encryption using the public key of the recipient, and where the identifier is also included

Art Unit: 2137

in the encryption), the combination of at least Menezes and Davis clearly discloses that the identification information is encrypted by the public key of the intended recipient and at least fairly suggests that such encryption would take place at the sender before the document as a whole would be sent (noting in particular the disclosure in Davis of the document and the control information of the header being encrypted at the sender, column 4, line 39-column 5, line 9).

Therefore, for the reasons detailed above, the Examiner maintains the rejections as set forth below.

Claim Objections

3. The objection to Claim 1 for informalities is withdrawn in light of the amendments to the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linsker et al, US Patent 5598473, in view of Mazzagatte et al, US

Patent 6862583; Davis et al, US Patent 5633932; and Menezes et al, *Handbook of Applied Cryptography*.

In reference to Claims 1, 5, and 8, Linsker discloses a method for determining the authenticity of a fax document (column 2, lines 23-27) that includes receiving a document and a digest of the document created by a hash algorithm and encrypted with a first token of the sender, which is the sender's private key (column 4, lines 54-60, where digest signature DS is the encrypted digest); obtaining a second token of the sender, which is the sender's public key, relating to the private key (column 4, lines 57-65); decrypting the digest with the public key (column 5, lines 20-23); creating a second digest using a hash algorithm (column 5, lines 23-27, and column 4, lines 25-35); and comparing the decrypted received digest with the second created digest (column 5, lines 23-42). However, although Linsker discloses authenticating the sender of a document, Linsker does not explicitly disclose verifying the identity of the intended recipient of a document.

Mazzagatte discloses a method for authenticated secure printing, which can be implemented for fax documents (column 4, lines 35-37), and which includes receiving and securely retaining a digital document and a transmitted independently verifiable data record of an intended recipient at a printout station (column 8, line 20-column 9, line 7; noting column 8, line 63-column 9, line 1, where the data is securely stored at the printer; further noting column 8, lines 20-29, where the digital certificate is the independently verifiable data record); obtaining a first token of the intended recipient, which is the recipient's private key (column 4, lines 9-12); requesting proof of the

Art Unit: 2137

intended recipient's identity at the printout station using the independently verifiable data record (column 9, lines 49-51); and releasing the document when the intended recipient's identity has been proven by use of the first token of the intended recipient that is related to a second token of the recipient, where the second token is the recipient's public key (column 9, lines 46-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker by including verification of the intended recipient in addition to authentication of the sender, in order to ensure that printout of sensitive documents is authorized and that print data is securely stored (see Mazzagatte, column 2, lines 7-10).

Although Linsker discloses authenticating the sender of a document and Mazzagatte discloses verifying the identity of the intended recipient of a document, neither Linsker nor Mazzagatte explicitly discloses that identification data is encrypted specifically by the transmission station. Davis discloses a method for user authentication at a print node, which may process fax documents (see column 1, lines 39-45), and which includes receiving and securely retaining a digital document and a transmitted independently verifiable data record of an intended recipient at a printout station (column 5, lines 13-24; column 6, lines 38-40); obtaining a first token of the intended recipient, which is the recipient's private key (see column 5, lines 52-65); requesting proof of the intended recipient's identity at the printout station using the independently verifiable data record (column 5, lines 52-65; column 6, lines 40-41); decrypting identifying data with the first token (see column 5, lines 13-18 and 52-65), where the data was encrypted with the second token of the intended recipient, which is

Art Unit: 2137

the recipient's public key, and the data was encrypted at the transmitting station (column 4, line 39-column 5, line 9, where a header is encrypted at the sending node, where the header can include information identifying the intended recipient); determining the authenticity of the recipient of the document (column 5, line 33-column 6, line 8, noting particularly column 5, lines 52-65 where a private key on a smart card and a challenge/response protocol are used for authentication); and releasing the document when the intended recipient's identity has been proven by use of the first token (column 5, lines 21-24; column 6, lines 41-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker and Mazzagatte by including encryption of identifying data at the transmitting station, in order to allow for confirmation that the intended recipient is present using authentication techniques (see Davis, column 2, lines 26-29, and column 4, lines 65-67).

Although Linsker, Mazzagatte, and Davis disclose that the independently verifiable data record includes identification data (Mazzagatte, column 8, lines 20-30) and that a challenge/response protocol is used to authenticate and prove the intended recipient's identity (Mazzagatte, column 9, lines 58-61; Davis, column 5, lines 58-65), Linsker, Mazzagatte, and Davis do not explicitly disclose that the challenge/response protocol decrypts encrypted identification data with the recipient's private key, where the identification data was encrypted with the recipient's public key. However, Menezes discloses that challenge-response identification and authentication can be performed based on public-key decryption (page 403, Section 10.3.3, first paragraph). Menezes

Art Unit: 2137

further discloses that the protocol includes encrypting a challenge, which can be an identifier, with a public key, decrypting the encrypted challenge with a private key to form the response, comparing the challenge and response, and verifying the identity if the comparison result indicates a match (page 404, "(i) Challenge-response based on public-key decryption", noting that, in addition to random numbers, identifier "B" is one of the parts of the challenge). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker, Mazzagatte, and Davis by implementing the challenge/response protocol in the manner suggested by Menezes, in order to identify the recipient based on its private key (page 403, Section 10.3.3, first paragraph) and avoid chosen text attacks (page 404, paragraph "Identification based on PK decryption and witness").

In reference to Claims 2 and 3, Linsker, Mazzagatte, Davis, and Menezes further disclose receiving a digital certificate of the sender and that the public key is part of the certificate (see Linsker, column 5, lines 2-13).

In reference to Claim 4, Linsker, Mazzagatte, Davis, and Menezes further disclose checking the validity of the certificate online (see Linsker, column 5, lines 6-13).

In reference to Claims 6 and 7, Linsker, Mazzagatte, Davis, and Menezes further disclose printing the document with a verifying mark once it has been authenticated (see Linsker, column 6, lines 3-29).

In reference to Claims 9, 10, and 17, Linsker discloses a method of sending a fax document (column 2, lines 23-27) that includes creating a digest of the document using

Art Unit: 2137

a hash algorithm (column 4, lines 25-35); encrypting the digest with a first token of the sender, which is the sender's private key (column 4, lines 40-47); obtaining a second token of the sender, specifically the sender's public key, that will be used to decrypt the encrypted digest; and sending the encrypted digest, the document, and the public key to the recipient (column 4, lines 50-53). However, although Linsker discloses authenticating the sender of a document, Linsker does not explicitly disclose verifying the identity of the intended recipient of a document.

Mazzagatte discloses a method for authenticated secure printing, which can be implemented for fax documents (column 4, lines 35-37), and which includes receiving and securely retaining a digital document and a transmitted independently verifiable data record of an intended recipient at a printout station (column 8, line 20-column 9, line 7; noting column 8, line 63-column 9, line 1, where the data is securely stored at the printer; further noting column 8, lines 20-29, where the digital certificate is the independently verifiable data record); requesting proof of the intended recipient's identity at the printout station using the independently verifiable data record (column 9, lines 49-51); and releasing the document when the intended recipient's identity has been proven by use of a second token of the intended recipient that is related to the recipient's first token, where the second token is the recipient's private key (column 9, lines 46-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker by including verification of the intended recipient in addition to authentication of the sender, in order

Art Unit: 2137

to ensure that printout of sensitive documents is authorized and that print data is securely stored (see Mazzagatte, column 2, lines 7-10).

Although Linsker discloses authenticating the sender of a document and Mazzagatte discloses verifying the identity of the intended recipient of a document, neither Linsker nor Mazzagatte explicitly discloses that identification data is encrypted specifically by the transmission station. Davis discloses a method for user authentication at a print node, which may process fax documents (see column 1, lines 39-45), and which includes obtaining a first token of the intended recipient, which is the recipient's public key (column 3, line 40-column 4, line 56); encrypting identification information of the intended recipient using the first token of the recipient (column 4, line 39-column 5, line 9, where a header is encrypted at the sending node, where the header can include information identifying the intended recipient); sending and then receiving and securely retaining a transmitted document, the encrypted identification information, and a transmitted independently verifiable data record of an intended recipient at a printout station (column 5, lines 13-24; column 6, lines 38-40); requesting proof of the intended recipient's identity at the printout station using the independently verifiable data record (column 5, lines 52-65; column 6, lines 40-41); decrypting identifying data with a second token, which is the private key of the recipient (see column 5, lines 13-18 and 52-65); determining the authenticity of the recipient of the document (column 5, line 33-column 6, line 8, noting particularly column 5, lines 52-65 where a private key on a smart card and a challenge/response protocol are used for authentication); and releasing the document when the intended recipient's identity has

Art Unit: 2137

been proven by use of the second token (column 5, lines 21-24; column 6, lines 41-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker and Mazzagatte by including encryption of identifying data at the transmitting station, in order to allow for confirmation that the intended recipient is present using authentication techniques (see Davis, column 2, lines 26-29, and column 4, lines 65-67).

Although Linsker, Mazzagatte, and Davis disclose that the independently verifiable data record includes identification data (Mazzagatte, column 8, lines 20-30) and that a challenge/response protocol is used to authenticate and prove the intended recipient's identity (Mazzagatte, column 9, lines 58-61; Davis, column 5, lines 58-65), Linsker, Mazzagatte, and Davis do not explicitly disclose that the challenge/response protocol decrypts the encrypted identification data with the recipient's private key. However, Menezes discloses that challenge-response identification and authentication can be performed based on public-key decryption (page 403, Section 10.3.3, first paragraph). Menezes further discloses that the protocol includes encrypting a challenge, which can be an identifier, with a public key, decrypting the encrypted challenge with a private key to form the response, comparing the challenge and response, and verifying the identity if the comparison result indicates a match (page 404, "(i) Challenge-response based on public-key decryption", noting that, in addition to random numbers, identifier "B" is one of the parts of the challenge). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker, Mazzagatte, and Davis by implementing the

Art Unit: 2137

challenge/response protocol in the manner suggested by Menezes, in order to identify the recipient based on its private key (page 403, Section 10.3.3, first paragraph) and avoid chosen text attacks (page 404, paragraph "Identification based on PK decryption and witness").

In reference to Claims 11 and 12, Linsker, Mazzagatte, Davis, and Menezes further disclose proving the sender's identity by transferring data from a personal portable data carrier holding the private key to the transmission station from which the document will be sent, and that the sender enters a verifiable security identifier to establish the sender's identity (see Linsker, column 7, lines 13-21).

In reference to Claims 14-16, Linsker, Mazzagatte, Davis, and Menezes further disclose obtaining details of the sender, including the public key, from a central database, and providing the details and public key in a digital certificate (see Linsker, column 4, lines 50-53; column 5, lines 2-13).

Claims 18 and 19 are apparatus claims corresponding substantially to the methods of Claims 1 and 9, and are rejected by a similar rationale.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linsker in view of Mazzagatte, Davis, and Menezes as applied to claim 11 above, and further in view of Clark, US Patent 5448045.

Linsker, Mazzagatte, Davis, and Menezes disclose everything as applied above in reference to Claim 11. However, Linsker, Mazzagatte, Davis, and Menezes do not

Art Unit: 2137

explicitly disclose that the digest is encrypted within the personal portable data carrier. Clark discloses that digital signatures (formed by encrypting a message digest with a private key) can be performed in smart cards (column 8, lines 53-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Linsker, Mazzagatte, Davis, and Menezes to include encrypting the digest within the personal portable data carrier, in order to prevent compromise of the sender's private key (see Clark, column 8, lines 57-62).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2137

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary A. Davis whose telephone number is (571) 272-3870. The examiner can normally be reached on weekdays 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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